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TELECOM REGULATORY AUTHORITY OF INDIA

THE TELECOMMUNICATION TARIFF (SIXTY FIRST AMENDMENT) ORDER, 2016

(No. 1 of 2016)

NOTIFICATION

New Delhi, the 22nd November, 2016

No. 301-30/2016-F&EA.—In exercise of the powers conferred upon it under sub-section (2) of section 11, read with sub-clause (i) of clause (b) of sub-section (1) of the said section, of the Telecom Regulatory Authority of India Act, 1997 (24 of 1997), the Telecom Regulatory Authority of India hereby makes the following Order further to amend the Telecommunication Tariff Order, 1999, namely:

1. (1) This Order may be called the Telecommunication Tariff (Sixty First Amendment) Order, 2016.
(2) It shall come into force from the date of its publication in the Official Gazette.
2. In clause 2 of the Telecommunication Tariff Order, 1999 (hereinafter referred to as the principal tariff order),-
 - (a) for sub-clause rb, the following sub-clause shall be substituted, namely:-

“rb. “USSD based mobile banking and payment services” means delivery of banking and payment services through mobile phones over USSD”;
 - (b) for sub-clause rc, the following sub-clause shall be substituted, namely:-

“rc. “USSD session for USSD based mobile banking and payment services” means a session over USSD between the mobile subscriber and the bank or its agent or any entity authorized by the Reserve Bank of India for delivery of banking and payment services through mobile phones over USSD”;

3. In the Schedule II to the principal tariff order, after item (7A), the following items and entries relating thereto shall be inserted, namely:

ITEM	TARIFF
“(7B) Use of USSD for USSD-based mobile banking and payment services	
(7.a) Charge for outgoing USSD session for USSD-based mobile banking and payment services	Ceiling of Re. 0.50 per USSD Session
(7.b) Other matters related to USSD-based mobile banking and payment services	Forbearance.”

VINOD KOTWAL, Advisor (F&EA)

[ADVT.- III/4/Exty./311 (142)]

Note.1. – Hindi version will follow.

Note.2. –The Telecommunication Tariff Order, 1999 was published in the Gazette of India, Extraordinary, Part III, Section 4 under notification No. 99/3 dated 9th March, 1999, and subsequently amended as given below:

Amendment No.	Notification No. and Date
1 st	301-4/99-TRAI (Econ) dated 30.3.1999
2 nd	301-4/99-TRAI(Econ) dated 31.5.1999
3 rd	301-4/99-TRAI(Econ) dated 31.5.1999
4 th	301-4/99-TRAI(Econ) dated 28.7.1999
5 th	301-4/99-TRAI(Econ) dated 17.9.1999
6 th	301-4/99-TRAI(Econ) dated 30.9.1999
7 th	301-8/2000-TRAI(Econ) dated 30.3.2000
8 th	301-8/2000-TRAI(Econ) dated 31.7.2000
9 th	301-8/2000-TRAI(Econ) dated 28.8.2000
10 th	306-1/99-TRAI(Econ) dated 9.11.2000
11 th	310-1(5)/TRAI-2000 dated 25.1.2001
12 th	301-9/2000-TRAI(Econ) dated 25.1.2001
13 th	303-4/TRA-2001 dated 1.5.2001
14 th	306-2/TRA-2001 dated 24.5.2001
15 th	310-1(5)/TRA-2000 dated 20.7.2001
16 th	310-5(17)/2001-TRA(Econ) dated 14.8.2001
17 th	301/2/2002-TRA(Econ) dated 22.1.2002
18 th	303/3/2002-TRA(Econ) dated 30.1.2002
19 th	303/3/2002-TRA(Econ) dated 28.2.2002
20 th	312-7/2001-TRA(Econ) 14.3.2002
21 st	301-6/2002-TRA(Econ) dated 13.6.2002
22 nd	312-5/2002-TRA(Eco) dated 4.7.2002

23 rd	303/8/2002-TRAI(Econ) dated 6.9.2002
24 th	306-2/2003-Econ dated 24.1.2003
25 th	306-2/2003-Econ dated 12.3.2003
26 th	306-2/2003-Econ dated 27.3.2003
27 th	303/6/2003-TRAI(Econ) dated 25.4.2003
28 th	301-51/2003-Econ dated 5.11.2003
29 th	301-56/2003-Econ dated 3.12.2003
30 th	301-4/2004(Econ) dated 16.1.2004
31 st	301-2/2004-Eco dated 7.7.2004
32 nd	301-37/2004-Eco dated 7.10.2004
33 rd	301-31/2004-Eco dated 8.12.2004
34 th	310-3(1)/2003-Eco dated 11.3.2005
35 th	310-3(1)/2003-Eco dated 31.3.2005
36 th	312-7/2003-Eco dated 21.4.2005
37 th	312-7/2003-Eco dated 2.5.2005
38 th	312-7/2003-Eco dated 2.6.2005
39 th	310-3(1)/2003-Eco dated 8.9.2005
40 th	310-3(1)/2003-Eco dated 16.9.2005
41 st	310-3(1)/2003-Eco dated 29.11.2005
42 nd	301-34/2005-Eco dated 7.3.2006
43 rd	301-2/2006-Eco dated 21.3.2006
44 th	301-34/2006-Eco dated 24.1.2007
45 th	301-18/2007-Eco dated 5.6.2007
46 th	301-36/2007-Eco dated 24.1.2008
47 th	301-14/2008-Eco dated 17.3.2008
48 th	301-31/2007-Eco dated 1.9.2008
49 th	301-25/2009-ER dated 20.11.2009
50 th	301-24/2012-ER dated 19.4.2012
51 st	301-26/2011-ER dated 19.4.2012
52 nd	301-41/2012-F&EA dated 19.09.2012
53 rd	301-39/2012-F&EA dated 1.10.2012
54 th	301-59/2012-F&EA dated 05.11.2012
55 th	301-10/2012-F&EA dated 17.06.2013
56 th	301-26/2012-ER dated 26.11.2013

57 th	312-2/2013-F&EA dated 14.07.2014
58 th	312-2/2013- F&EA dated 01.08.2014
59 th	310-5 (2)/2013-F&EA dated 21.11.2014
60 th	301-16/2014-F&EA dated 09.04.2015

Note.3. – The Explanatory Memorandum explains the objects and reasons for the Telecommunication Tariff (Sixty First Amendment) Order, 2016.

Explanatory Memorandum

A- Introduction and Background

1. The purpose of the present amendment to the TTO is to lay down a revised framework for Unstructured Supplementary Service Data (USSD) based mobile banking and payment services. The amendment prescribes a revised ceiling tariff for conducting a banking transaction including payment services through a mobile phone over USSD. This explanatory memorandum aims to provide the rationale for this regulatory action.
2. The recommendations of an Inter-Ministerial Group (IMG) were considered by the Committee of Secretaries under the chairmanship of Cabinet Secretary in April 2010 to approve a framework for delivery of basic financial services using mobile phones. As per this framework, the mobile linked 'no-frills' accounts can be used by the consumers for five basic transactions - cash deposit, cash withdrawal, balance enquiry, transfer of money from one mobile-linked account to another, and transfer of money to a mobile-linked account from a regular bank account. However, in the recent past, the policy and regulatory thrust has widened from a mere plain vanilla banking transactions to a broader 'Financial inclusion' agenda. Financial inclusion is now generally understood to mean access to a wide range of financial services at a reasonable cost, including banking products as well as other financial services like insurance and equity products.¹
3. However, notwithstanding, the expansion of Business Correspondent Agent (BCA) network and thrust on opening bank branches and ATMs in rural areas, the 'last mile' service delivery continues to remain a matter of concern. There were only 7.8 bank branches per 100,000 of population in rural and semi-urban areas, less than half of 18.7 bank branches per 100,000 of population in urban and metropolitan areas as of June, 2015.²
4. The Pradhan Mantri Jan Dhan Yojana (PMJDY) announced in August, 2014 addresses many of these issues by ensuring that the benefits of financial access are extended to the weaker sections and low income groups. The scheme recognizes that deep penetration at affordable cost is possible only with effective use of technology³. Along with this, the Jan Dhan-Aadhaar-Mobile (JAM) trinity offers a comprehensive solution for targeted delivery of government benefits and subsidies to the intended beneficiaries through the use of mobile phones.
5. RBI constituted Committee on 'Medium-term Path on Financial Inclusion' in its report of December 2015⁴ suggested that a low-cost solution based on mobile technology can be a good option for improving financial inclusion by enhancing the effectiveness of 'last mile' service delivery. The Committee was of the view that to translate financial access into enhanced convenience and usage, there is a need for better utilization of the mobile banking facility and the maximum possible Government-to-Person (G2P) payments, which would necessitate greater engagement by the government in the financial inclusion drive.

¹ A Hundred Small Steps: Report of the Committee on Financial Sector Reforms, Planning Commission, Government of India, 2009, http://planningcommission.nic.in/reports/genrep/rep_fr/cfsr_all.pdf.

² <https://rbidocs.rbi.org.in/rdocs/PublicationReport/Pdfs/FFIRA27F4530706A41A0BC394D01CB4892CC.PDF>

³ About Pradhan Mantri Jan Dhan Yojana, <http://www.pmjdy.gov.in/about>

⁴ <https://rbidocs.rbi.org.in/rdocs/PublicationReport/Pdfs/FFIRA27F4530706A41A0BC394D01CB4892CC.PDF>

6. In addition, in its endeavour to encourage digital transactions and move towards 'less cash' society, Government of India (GOI) has announced a number of steps. In February 2016, GOI initiated a drive towards promotion of payments through cards and digital means with the following objectives⁵:
 - (i) To improve the ease of conducting card/ digital transactions for an individual;
 - (ii) To reduce the risk and costs of handling cash at the individual level;
 - (iii) To reduce costs of managing cash in the economy;
 - (iv) To build a transaction history to enable improved credit access and financial inclusion;
 - (v) To reduce tax avoidance; and
 - (vi) To reduce the impact of counterfeit money.
7. Government of India has in February 2016, issued 'Guidelines for the promotion of payments through cards and digital means'⁶. The Guidelines have, *inter-alia*, the following short term steps (to be implemented within one year):

"D. Encouraging Mobile Banking/ Payment Channels

- i. Department of Telecommunications shall take appropriate steps for rationalization/ reduction of USSD charges and the feasibility of its being charged only on successful transactions.
 - ii. Department of Telecommunications/ Department of Financial Services/ RBI shall make a provision for a unified USSD platform which can support transactions across all payment mechanisms.

..... "
8. RBI Vision-2018 too seeks to encourage greater use of electronic payments by all sections of society so as to achieve a 'less-cash' society. The vision, *inter-alia*, seeks to orient policies for mobile banking for facilitating faster payment services by way of enhancing options for customer registration for mobile banking services, enabling wider access to mobile banking services in multiple languages for non-smartphone users and encouraging innovative mobile based payment solutions.
9. This focus of RBI and GOI is in line with trend around the globe where it is increasingly being acknowledged that moving from purely mobile banking services to other payment services is important as these form critical components of the overall package of financial services. Not only do they facilitate access to other financial services but can also be critical to the efficient provision of those services.⁷
10. Subsequent to the laying down of the IMG framework for delivery of basic financial services using mobile phones, various stakeholders have taken several steps towards achieving the goal of financial inclusion.
11. In December, 2011, DoT allocated a USSD code *99# to Department of Financial Services (DFS) for mobile banking services through the USSD gateway of NPCI and asked the telecom service providers (TSPs) to connect to it as per the requirement of service in consultation with NPCI. In April, 2012, TRAI mandated that every TSP shall facilitate the banks to use SMS, USSD and IVR to provide banking services to its customers and deliver the message generated by the bank or the customer in not more than two stage transmission of message in the case of SMS or in not more than two stage entry of options in the case of USSD and IVR. In November, 2012, NPCI launched a USSD Gateway (National Unified USSD Platform) for enabling mobile banking through the USSD channel. The Authority through the Mobile Banking (Quality of Service) (Amendment) Regulations, 2013 dated 26.12.2013, increased the maximum number of stages for completing a mobile banking transaction from two to five.

⁵ F.No-01/02/2015-Cy.I Dated : 29th February, 2016 Government of India, Ministry of Finance, Department of Economic Affairs.

⁶ Ibid.

⁷ Payment aspects of financial inclusion, Committee on Payments and Market Infrastructures (Bank for International Settlements) and World Bank Group Task Force, April 2016, <http://www.bis.org/cpmi/publ/d144.pdf>.

12. In November 2013, with a view to facilitate mobile banking for financial inclusion, TRAI prescribed a ceiling tariff of Rs. 1.50 per USSD session for USSD-based mobile banking service and established a framework to facilitate the agents of the banks to interface with the access service providers for use of SMS, USSD and IVR channels to provide mobile banking services. By August 2014, all GSM cellular mobile telephone providers got connected to the National Unified USSD Platform (NUUP) platform of NPCI; as a result, all GSM subscribers were enabled to make use of USSD-based mobile banking services provided through the USSD code *99#.
13. However, all these initiatives did not lead to the desired result. In May 2016, only about 37 lakh mobile banking transaction attempts (over USSD channel) reached NPCI's platform (*99#) out of which about 54% were successful. Also, during 2015, there were references to TRAI from Department of Financial Services and RBI to consider following steps to increase the use of USSD based mobile banking financial services:
 - Permit up-to 8 steps in one USSD session from the current limit of 5
 - Increase in session timer limitation
 - Reduce the ceiling tariff of Rs. 1.50 per USSD session for USSD-based mobile banking
 - Enable USSD push messages for dropped USSD sessions
 - Make provisions for a unified USSD platform-which can support transactions across all payment mechanism
14. A series of discussions/meetings were held with the relevant stakeholders, viz., NPCI, TSPs and DFS over a period of several months. However, no common ground could be reached and thus the Authority decided to embark upon a comprehensive consultation process. A Consultation Paper (CP) on the "Review of regulatory framework for the use of USSD for mobile financial services" was issued on 02.08.2016 and was placed in public domain on TRAI's website (www.trai.gov.in) and mygov platform (mygov.in) of GOI. Stakeholders were invited to submit written comments by 14.09.2016 and counter-comments by 28.09.2016. The comments and the counter-comments received from the stakeholders were placed on TRAI's website— www.trai.gov.in. An Open House Discussion (OHD) for the stakeholders was organized on 27.10.2016 at New Delhi. The issues raised in the CP and the views of the stakeholders thereupon were deliberated by the Authority and are being examined in the succeeding paragraphs.

B- Analysis of the Key Issues Raised in the Consultation Paper

15. A summary for each issue together with the comments of stakeholders and further analysis thereon is presented below:
 - (1) **Adequacy of the present ceiling of five-stages for entry of options in a USSD session**
16. Majority of TSPs and their industry associations did not favour increasing the present ceiling of five-stage for entry options in a USSD session. They have stated that if number of stages is to be increased from 5 to 8 then the ceiling tariff should also be increased proportionately as increase in the number of stages will put a significant load on their signalling infrastructure. It has also been contended that number of stages per session may require reconsideration and review in case there is a sudden surge in volumes. They have further opined that any increase from the present 5 stages should be on the basis of mutual agreement between the banks and TSPs. Some TSPs, however, are agreeable to increase the number of sessions from 5 to 8 as some transactions may require more than 5 stages.
17. Most of the banks and Reserve Bank of India (RBI) have supported increasing the number of steps to 8 and some have even proposed to have unlimited stages per USSD session. It has been contended by these banks that the current 5 stages per USSD session are not enough for certain transactions like fund transfer, which are prone to input errors and are time-consuming. On the other hand, a few banks have suggested maintaining the present 5 stages only, as increasing the number of stages is likely to make the process cumbersome and user unfriendly.

18. Some organizations have also advocated for unlimited stages per USSD session as it would help in addressing the needs of the target consumer group, which is characterized by lower levels of literacy and awareness. It has also been highlighted that USSD is used by a majority of large-scale mobile money deployments across the world. Most of the individual stakeholders have also supported either 8 stages or unlimited number of stages per USSD session for mobile banking services.
19. The Authority is aware of the fact that USSD based mobile banking services were meant to drive the agenda of financial inclusion targeting a section of the population that is semi-literate and not very adept at the use of technology. Thus, the inputting by the consumer has to be kept to the minimum as human intervention leads to errors. Interface with the consumer has to be through a simple, minimalistic menu high on functionality. At the same time, in current scenario the current ceiling of 5 stages per USSD session poses a major handicap in undertaking certain transactions where the input errors are bound to happen. The input errors lead to failed/unsuccessful transactions and such customers are less likely to use USSD based mobile financial services again based on their poor service experience. NPCI and the banks therefore have to constantly strive to improve the software features and design to create a more user friendly menu for such USSD based mobile banking services as it would help in improving the customer experience and also the success rate of mobile banking transactions. Notwithstanding these facts, the Authority believes that at this inflection point there is merit in increasing the number of stages per USSD session to 8 from the present limit of 5 for giving an impetus to this service. Eight is the ceiling on the number of stages per USSD session and improvement in the software design should strive to reduce the number of stages for consumer convenience. Keeping this in mind, the Mobile Banking (Quality of Service) (Amendment) Regulations is being issued increasing the maximum number of stages for completing a mobile banking transaction from 5 to 8.

2) Deciding about the appropriate method for prescribing the tariff for USSD- based mobile banking and the issue regarding bearing of the cost for USSD session charges

20. Presently, the USSD sessions for banking are charged within the ceiling of Rs 1.50 per session as per the TTO (56th Amendment), 2013. The revenue realization for voice calls and SMS which have been under forbearance have undergone downward correction in the last three years. Keeping this in view, it was considered appropriate to review/decide about the appropriate method for determining the tariff in respect of USSD session for mobile banking and payment in the given circumstances and also to determine the new price methodology or new tariff.
21. On the issue of choosing the correct method for prescribing the tariff for USSD based mobile financial services, divergent views have been expressed by the stakeholders for e.g.:-
 - a) The cost based tariff should be prescribed wherein a user is charged per transaction.
 - b) "Cost plus" tariff for both system and customer initiated USSD session.
 - c) TSPs should charge customers, or give option to customers, for this service either on a pay per session basis (for prepaid subscribers), or at a flat rate as built into their Value Packs every month for their post paid audience, or both.
 - d) TSPs should also be allowed to offer subscription based model, in line with data or SMS packs. For e.g. TSP can offer unlimited USSD transaction pack for Rs. 10, Rs. 20 & so on.
 - e) TRAI should adopt the policy of forbearance w.r.t. USSD tariffs for mobile banking to allow the inter-play of market forces in determining the most optimal business models between the Banks and the TSPs.
 - f) The ceiling tariff should be much lower than Rs. 0.50 per USSD session.
 - g) "Cost plus" tariff for both system and customer initiated USSD session.
 - h) There can also be wholesale price for thousands of sessions that can be purchased by financial service providers at a competitive market price where regulator may set a price ceiling based on component based costing under which a competitive market may develop similar to bulk SMS pricing.

- i) Charges should be levied on the basis of time taken for conducting transactions. These charges should be benchmarked with voice calls.
- 22. Most of the banks and individuals have advocated the cost based method and/or mixed approach.
 - (a) Cost based Method. The cost based approach calculates cost per USSD session for tariff determination of the same. The cost shall consist of cost of clearly identified network, IT and other cost components including all relevant Capex and Opex involved in daily operations and maintenance for establishing end-to-end USSD session for mobile banking and payment session, and that is to be assessed and verified by subject matter experts and/or regulator.

While advocating the cost based method, it has been stated by one stakeholder that USSD Pricing, shall evolve in two stages towards maximum tariff efficiency and consumer benefits; the pricing should be done on full duration of USSD session and such an exercise would reveal a costing of less than 50 paise per 180 seconds of USSD session. Another stakeholder has stated that mobile banking is to be viewed as a public service with a view to facilitating financial inclusion; a transparent cost-based tariff should be adopted for outgoing USSD sessions, since cost is a reasonable indicator of fair prices, and can be the basis for intervention by TRAI. A few TSPs have also, advocated cost based method.

- (b) Mixed Approach. The approach in which the customer is having choice for availing this service either on a pay per session basis, or at a flat rate as built into their value packs every month for post paid customers, or both have been advocated by the most of the TSPs and their associations. They have further suggested that these should be allowed keeping in mind usage patterns across mobile subscribers. One of the stakeholder has suggested that the USSD tariff for mobile banking and payment service should be that of one local SMS per USSD session and for frequent users, as is the case with SMS, there should be volume packs of USSD for mobile banking and payment services be made available e.g. 100 USSD session per month at price in the same range as 100 local SMS pack per month. RBI & NPCI have also supported the mixed approach stating that both options (either on a pay per session basis or at a flat rate as built into their value packs) are to be kept open.
- 23. Most of the TSPs and their industry associations have not favoured the cost based method and stated that a cost-based approach is not warranted, and that regulation should not preclude different arrangements between banks and TSPs. One stakeholder has stated that due to low levels of traffic on the USSD channel for mobile banking, there is not enough evidence/data to derive a cost estimate. Most of the TSPs have favoured the policy of forbearance in the tariff for the USSD session for mobile banking and payment services. Many of them have also stated that the Authority should de-regulate both retail and wholesale mobile banking access pricing and allow the TSPs and banks to offer all options to the consumers. Further, as per majority of them, the arrangements could be either B2B or B2C or a hybrid of both. They have stated that mobile banking and e-payment is at a very nascent stage of growth and the eco-system is still developing and, therefore, it would be premature to fix a tariff per USSD session for mobile banking and payment services based on the cost at this stage.
- 24. Ideally, adoption of cost based approach could be a good choice when the tariff for other services (voice call, data and SMS) is declining. It is also beneficial to the customer. But tracing costs accurately is a pre-requisite for this approach to be successful. Determining all the costs involved with USSD poses a challenge because they're not always immediately apparent coupled with the current low volume of USSD transactions.
- 25. As regards to the arguments of the TSPs that mobile banking services are in the nature of 3rd party (i.e. non-telecom B2B) services and the Authority should de-regulate both retail and wholesale mobile banking access pricing and allow the TSPs and banks to offer any or all options to the consumers. It would suffice to say that USSD service for mobile banking and payment service has not matured enough and cannot be left for B2B model of pricing at this stage. Therefore, the arrangement such as B2B and forbearance may not be appropriate for the mobile based USSD financial services at this juncture.
- 26. In view of the revenue realization for voice calls (Re 0.49), SMS (Re 0.16/SMS) and data (Re 0.20/MB) for GSM services, charges for USSD session for mobile banking appear to be significantly high. For example, for checking the balance, the customer is charged Rs 1.50 each time he/she

checks his/her balance. Compared to this, an account holder can make free requests through 'missed call' banking or even through ATMs, branches and other channels for checking the account balance. In addition, the banks have not made enough effort to promote USSD based banking services. Banks are actively promoting Apps for consumer convenience and thus limiting themselves to users with smartphone. The unique selling point (USP) of using USSD for banking services is the fact that it can be used by the consumer with a basic feature phone, which are still pre-dominantly used by the Indian consumers and there is no need of having data-connectivity. In addition, it is a secure mode as the communication is real-time and no data is stored on the handset.

27. Most of the banks and individual stakeholders have suggested revising the ceiling for USSD session for mobile banking and financial service downward. Individual stakeholders have suggested that the ceiling for USSD session for mobile banking and payment service should be reduced to Rs 0.50 per session, but RBI, NPCI and some stakeholders have even suggested for keeping it in the range of Rs 0.25 to 0.50 per session. Suggestions also include that USSD session charges for mobile banking and payment service should be levied on the basis of time taken for conducting transactions and these charges should be benchmarked with SMS as both USSD and SMS use signalling channel in GSM and not voice/data channels. One stakeholder has suggested that the USSD tariff should be that of one local SMS per USSD session, i.e. maximum 50 paise per USSD session. These stakeholders have opined that the real growth of the service will come out of 'large volume of transactions and small value charges' rather than from 'high value charges and small volumes of transactions'.
28. TSPs and their industry associations, however, have cautioned that the charges should not be reduced in view of the following:-
 - a) The increase in number of steps and/or increase in number of transactions may require them to incur additional capital expenditure attributable only to this service i.e. USSD.
 - b) Huge investment in the billing system and to meet the strict guidelines for quality of service for mobile banking and payment service have already been made but there were not commensurate returns.
 - c) USSD session for mobile banking and payment service involves multiple hits which would engage the signalling channel and core network for a long time.
 - d) Comparison with SMS, Voice, and USSD based customer service rates is unwarranted given the cost savings being attained by these channels, and the lack of any such value proposition for the TSPs in USSD based banking services.
29. Thus, as is evident from the discussions above there are divergent views on the issue. Most of the stakeholders are in favour of revising the ceiling downward other than TSPs and their industry association. Some stakeholders have also argued that tariff of USSD session for mobile banking and payment service is an important determinant of the success of USSD-based mobile banking and payment service. As the use of USSD for mobile banking and payment service is not a main offering of the TSPs, the pricing of these services is not likely to be subjected to the same competitive pressure which the main offerings of the TSPs (viz. voice call, data and SMS) face in the marketplace. Besides, the use of USSD for mobile banking and payment service for financial inclusion carries definite socio-economic benefits to the target group i.e. unbanked/ under-banked population and, therefore, the price for the use of USSD for mobile banking needs to be reasonable and affordable. It is noteworthy that while voice calls travel over traffic channels, USSD messages and SMS messages travels over inexpensive signalling channels. The average revenue collection of outgoing SMS by the TSPs is Re. 0.16 per SMS.
30. In the light of the above, the Authority is of the view that a ceiling tariff of Rs. 0.50 per USSD session for mobile banking and payment service (which may comprise of one or more banking transaction as per agreement between bank/bank agent) would be reasonable to compensate the TSPs, regardless of whether the session results in a successful or a failed banking transaction, to meet the expenses incurred in the use of USSD for mobile banking service. It would also be reasonable enough to compensate for the increase in number of stages from 5 to 8. At the same time, TSPs are at liberty to further reduce the charges and offer tariff below the prescribed ceiling.

31. There were divergent views/comments on the question: whether the present pricing model for USSD-based mobile banking in which consumers pay for the use of USSD should continue and if the answer is in the negative, then what should be alternative pricing models? One TSP has suggested that the banks can make the transaction charges free for initial few years or else they may follow subscription based service at nominal prices as per a formula decided by the bank. TSPs have also suggested that the charges between banks and telecom operators should be left for mutual negotiations. Most of the TSPs and their associations had opined that it should be left to the market forces to decide about who should pay for the charges. On the other hand, most of the banks were of the view that the charges should continue to be paid by the individuals as is being done presently. However, one bank was of the opinion that an optimal cost sharing model between banks and customers should be created for deciding this.
32. From the comments of the majority of the stakeholders, it can be concluded that the principle that the person seeking the service must pay for the service, is still widely acceptable provided the ceiling for the charges is reduced. The customer is also paying the charges for mobile banking and payment services in other modes viz. through web based applications, SMS or applications. Therefore, the Authority is of the view that the current regulatory regime of customer paying for the USSD session charges (B2C) should continue.

(3) Appropriateness of mandating the service providers to levy charges for USSD session for mobile banking only if the customer is able to complete his/ her transaction.

33. Presently, a customer is charged for the service at the initiation of the session itself irrespective of the fact whether he/she is able to complete his /her transaction or not. Currently, the failure rates for these USSD service are as high as 50 percent and this leads to high customer dissatisfaction as the transaction may be unsuccessful for a variety of reasons at various levels viz., the bank, the NUUP platform, the TSP or even due to consumer reasons. Therefore, a question was raised in the consultation whether it would be appropriate to mandate the service providers to levy charges for USSD session for mobile banking only if the customer is able to complete his /her transaction?
34. Most of the TSPs and their industry association have highlighted the fact that any USSD based transaction has many points of failures which are beyond the telecom network or control of TSPs and in many cases, the TSPs does not have information about the failures caused at the bank/NPCI level. It has also been informed that the decision regarding session not getting completed / remaining incomplete can only be taken by the banks/NPCI servers as the TSP does not have the visibility / failure of the USSD Session. Internationally too, in some countries mobile operators charge the customer for the USSD session/ transaction regardless of success/failure. Some TSPs have also suggested that banks can buy bulk USSD sessions and compensate their consumers for such failed transactions. Therefore, the TSPs and their association believe that the current system should continue as TSPs systems may not be able to modify the billing system/IN on the basis of failures caused in the system, which are beyond their control.
35. Similarly, some banks have not supported the idea regarding levying of charges for only successful transactions. On the other hand, few banks have contended that customers should be charged only for successful transactions taking into account the financial inclusion aspects of the consumer using this platform; the connectivity issues across different parts of the country; and the awareness levels of the user. Some other stakeholders have opined that consumers should be charged for failed transactions but if the ceiling tariffs are brought down it they may not worry about them so much.
36. After carefully examining the stakeholders' comments on this point, the Authority is of the view that the issue is complex and deciding on the 'attributability' for failed transactions may lead to disputes as a USSD based session has a number of points which may not be entirely within the control of a single entity. Similarly, the transactions may also fail due to inputting errors by the consumers or any other factor at their end. Implementing this functionality would also require changes at the IN/billing platforms of the TSPs and design of a reverse flow system. Therefore, Authority is of the view that instead of further complicating the matter, it would be appropriate at this stage, if the problem is mitigated by reducing the transaction charges itself. In addition, steps would have to be taken by the NPCI to undertake a deep 'drill-down' of the factors responsible for transaction failures and take appropriate steps to address them.

(4) Requirement of allowing USSD push sessions in case the customer initiated USSD session is dropped.

37. TSPs and their industry association have not supported allowing the USSD push sessions in case, the customer initiated session is dropped as it poses a security risk to their networks. It has been strongly argued that this would expose their switching system to the aggregation platform providers / banks. It has been reiterated that signalling network cannot be permitted to be accessed by the third party as it can be potentially misused for disrupting the services of the entire network. It has also been opined that push USSD interface on different protocol like SMPP is not recommended as there is no control on the USSD content /number of transactions and the duration of session.
38. On the other hand, most of the banks have supported allowing USSD push sessions as it would help in enhancing the customer convenience and gaining their confidence in the system. Similarly, most of the individual stakeholders have also supported allowing USSD push sessions.
39. The responses received were examined and Authority has come to the conclusion that allowing USSD based push sessions may expose the networks of the telecom service providers to various security threats and the same cannot be allowed in the overall interest of the telecom network security. Therefore, Authority believes that USSD based push sessions may not be allowed at this point of time.

(5) Requirement of a Unified USSD platform which can support transaction across or payment platforms.

40. At present, only mobile banking transactions are permitted to be carried out on USSD aggregation platforms of the National Unified USSD Platform operated by NPCI. In the consultation paper, question was raised on whether all variety of mobile payment services, including merchant payments, utility bill payments, mobile/ DTH recharges etc., should also be permitted on USSD aggregation platforms.
41. TSPs and their associations are of the view that only basic mobile banking should be allowed through USSD based platform as allowing other services would dilute focus as contemplated for providing basic financial services to the unbanked. It has further been stated that allowing other payment mechanism is beyond the purview of the goal of financial inclusion. It has also been argued that market forces should be allowed to determine the approaches on such opportunities rather than regulatory intervention as this may lead to suboptimal outcome. If payments beyond banking transactions are to be allowed through USSD platform then it should be a P2P decision between the TSPs and the aggregator platform. They are, therefore, of the view that inclusion of additional services should be on the basis of mutually negotiated arrangements between NPCI & TSPs.
42. On the other hand, other organizations are of the view that it is important to develop acceptance infrastructure and USSD aggregation platform being cashless/cardless can be used without card, merchant discount rate and internet and this would drive consumer behaviour to move to digital electronic payment via merchant acceptance and promotion. They have also suggested that important services like mobile recharge, utility bill payments, DTH payment, P2P money transfer should be allowed as they are the most popular payments by any category and would enhance the adoption of the USSD services.
43. Similarly, most of the banks including RBI have supported the inclusion of merchant payments, the Bharat Bill Payments System (BBPS) on the USSD platform. Banks have also requested for inclusion of Pre-Paid Instruments (PPIs) on the *99# platform as they are important in the payment ecosystem. RBI has also requested that all entities that are governed under the Payments and Settlement Act, 2007 of RBI should be allowed to offer the services on *99# interoperable USSD platform.
44. This question of allowing variety of mobile payment services, including merchant payments, utility bill payments, mobile/ DTH recharges etc. on NPCI USSD aggregation platform is particularly important in light of the importance of promoting digital payments as a critical part of the financial

inclusion agenda. The G. Padmanabhan Committee⁸ set up by the Reserve Bank of India (RBI) to study the Feasibility of Implementation of GIRO based Payment Systems had estimated that over 30,800 million bills amounting to Rs. 6223 billion are generated each year in the top 20 cities in the country. Cash and cheque payments continue to be predominant form of payment of these bills, although other forms of payments are also being accepted. Demirguc-Kunt *et al*⁹. note that "*digitizing payments like these would enable account holders to make the payments in a way that is easier, more affordable, and more secure*". The authors note that this can have the following advantages:

- It can improve the efficiency of making payments by increasing the speed of payments and by lowering the cost of disbursing and receiving them.
 - It can enhance the security of payments and thus reduce the incidence of crime associated with them.
 - It can increase the transparency of payments and thus reduce the likelihood of leakage between the sender and receiver.
45. It is well-understood that a less cash society is not only more financially inclusive but also is beneficial from the point of view of enhancing the national output. Management of cash is a significant operational expense for any financial institution. This cost item for the banks eventually becomes a cost item for the individual and in turn to the whole economy. Such cost items harm most to the poor and therefore, the goal of financial inclusion is inseparably linked with the vision of a less cash society. Thus, there is merit in moving towards a less-cash and more digital payment transaction society as is being promoted by the Government through its various guidelines and initiatives.
46. As per the Consultative Group to Assist the Poor (CGAP), at present, USSD is the best-available option to serve the payments needs of low-income customers, taking into account the factors of reach (compatibility with handsets), user experience, security, cost, and ease of deployment for the provider¹⁰.
47. Similarly, Bharat Bill Payment System (BBPS) an integrated and interoperable bill payment system to allow customers to pay a variety of bills in an efficient and convenient manner at a single point is being implemented by NPCI. It is expected to serve as an accessible bill payment system to the large segments of unbanked and under-banked population. It will also offer convenience to the billers. To begin with, only repetitive payments for everyday utility services such as electricity, water, gas, telephone and Direct-to-Home (DTH) have been covered within the scope of BBPS. Gradually, the scope would be expanded to include other types of repetitive payments, like school / university fees, municipal taxes etc. Allowing the use of USSD on the BBPS platform will ensure that users of basic phones, who do not have access to the Internet, are also able to participate in digital payments using this platform.
48. In view of the above, the Authority is of the view that usage of USSD channel should be allowed for offering payment services to all the authorized entities regulated under the Payments and Settlement Act, 2007 of RBI and payments being received on Bharat Bill Payment System (BBPS).

(7) Any other issues.

49. A number of stakeholders have also raised a very important point that enough effort has not been made by the banks or the NPCI to raise awareness about the USSD based mobile banking services or promote this service by educating the consumers about its functionalities. A comprehensive

⁸ Report of the Committee to Study the Feasibility of Implementation of Giro Based Payment System in India, 07 May 2013, <https://rbi.org.in/scripts/PublicationReportDetails.aspx?UrlPage=&ID=701#R5>

⁹ Asli Demirguc-Kunt, Leora Klapper, Dorothe Singer, Peter Van Oudheusden, The Global Findex Database 2014: Measuring Financial Inclusion around the World, World Bank Group, April 2015, <http://documents.worldbank.org/curated/en/187761468179367706/pdf/WPS7255.pdf#page=3>

¹⁰ CGAP, Promoting Competition in Mobile Payments: The Role of USSD, CGAP, February 2015, <https://www.cgap.org/sites/default/files/Brief-The-Role-of-USSD-Feb-2015.pdf>

marketing and communication strategy has to be devised to promote the service keeping in view the heterogeneity and spread of rural areas and behavioural aspects of the target population.

50. Some stakeholders' have also proposed discontinuation of USSD based approach and instead proposed utilizing encrypted SMS as transaction channel and carrying out encrypted data over the channel. It has also been contended that enough evidence is not available to confirm that low uptake of these services is due to challenges to the affordability of USSD access.
51. During interactions in the OHD it was also pointed out by some stakeholders that not all bank accounts are linked to a mobile phone. For linking their bank accounts, the consumers have to physically go to a bank branch. Some stakeholders have also highlighted the need for putting in place a robust consumer dispute resolution system.
52. After examining the above issues, the Authority is of the view that USSD can be used for delivering the mobile banking as well as other payment services. However, there are a number of other steps also that need to be taken, which inter-alia, include relooking at the architecture of the USSD framework by NPCI for improving the software design elements; increasing consumer awareness about this service through a time-bound, targeted communication strategy; putting in place a mechanism of linking bank accounts with mobile phones through a simplified process.
53. It has also been noted by the Authority that there is a high rate of failed transactions and the transactions have not scaled up. There can be a number of reasons for it as noted above; tariff being one of them. NPCI/banks/other stakeholders need to evolve a policy framework where the consumer does not have to pay for these transactions, particularly the failed ones and the cost of transactions is borne either by NPCI/banks/other stakeholders. This will eventually give an impetus to the service, which can contribute to the fulfillment of an important aspect of 'Digital India' by encouraging 'less cash' society. The Authority will continue to keep a watch on the progress of the service and take necessary steps from time to time

List of Acronyms

Sl. No.	Acronym	Expansion
1	ATM	Automated Teller Machine
2	B2B	Business-to-Business
3	B2C	Business-to-Customer
4	BCA	Business Correspondent Agents
5	BBPS	Bharat Bill Payment System
6	CGAP	Consultative Group to Assist the Poor
7	DFS	Department of Financial Service
8	DoT	Department of Telecommunications
9	DTH	Direct-to-Home
10	GoI	Government of India
11	GSM	Global System for Mobile Communication
12	G2P	Government to Person
13	IMG	Inter Ministerial Group
14	IT	Information Technology
15	IVR	Interactive Voice Response
16	JAM	Jan Dhan-Aadhaar-Mobile

17	OHD	Open House Discussion
18	NPCI	National Payment Corporation of India
19	NUUP	National Unified USSD Platform
20	P2P	Peer to Peer
21	PPI	Pre-paid Instrument
22	PMJDY	Pradhan Mantri Jan-Dhan Yojana
23	QoS	Quality of Service
24	RBI	Reserve Bank of India
25	SMS	Short Message Service
26	SMPP	Short Message Peer to Peer
26	TRAI	Telecom Regulatory Authority of India
27	TSPs	Telecom Service Providers
28	TTO	Telecommunication Tariff Order
29	USP	Unique selling point
30	USSD	Unstructured Supplementary Service Data